CIVIL AIM CONSULTANTS & ENGINEERS

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An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date: 04.06.2021

TEST REPORT

CLIENT	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	:	**M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.
NAME OF THE WORK	:	Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.
SAMPLE ID	:	Cement (Birla OPC 53 Grade)
DATE OF MANUFACTURE		May - 2021
DATE OF TESTING		02.06.2021 to 04.06.2021
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269-2015
1	a) Initial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	360 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

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ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು.

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 04.06.2021

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.

Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 04.06.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	89	8.90	8.90	91.1	90-100
2.36	136	13.60	22.50	77.5	75-100
1.18	180	18.00	40.50	59.5	55-90
600 Micron	155	15.50	56.00	44.0	35-59
300 Micron	218	21.80	77.80	22.2	8-30
150 Micron	156	15.60	93.40	6.6	0-10

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 04.06.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.

Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 04.06.2021

Material : Sand - Masonry Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	12	1.20	1.20	98.8	90-100
1.18	39	3.90	5.10	94.9	70-100
600 Micron	86	8.60	13.70	86.3	40-100
300 Micron	265	26.50	40.20	59.8	5-70
150 Micron	489	48.90	89.10	10.9	0-15

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 04.06.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor. Bangalore.

Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 04.06.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 20mm Aggregates

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	142	2.8	2.8	97.2	95-100
10	2466	49.3	52.2	47.8	25-55
4.75	1950	39.0	91.2	8.8	0-10

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 04.06.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.

Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.

Date of Testing : 04.06.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	198	1.32	1.32	98.68	95-100
20	8233	54.89	56.21	43.79	30-70
10	3256	21.71	77.91	22.09	10-35
4.75	2815	18.77	96.68	3.32	0-5

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 09.06.2021

GRADATION FOR WMM

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor.
Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.
IS Code: IS 2386 (Part I) 1963(RA 2011)
Date of Testing : 09.06.2021
Material Type : Wet Mix Macadam

Oven Dry Wt, gms [illegible]

Is Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	198	198	2.0	98.0	95-100
22.4	2530	2728	27.3	72.7	60-80
11.2	2166	4894	48.9	51.1	40-60
4.75	1890	6784	67.8	32.2	25-40
2.36	1154	7938	79.4	20.6	15-30
0.600	575	8513	85.1	14.9	8-22
0.075	1216	9729	97.3	2.7	0-5

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Job No. CACE/BBMP/RGC/W.No.13/2021-22 Date: 09.06.2021

Aggregate Impact Value

Client	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Agency	M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy), Contractor, Bangalore
Name of the Work	Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.
IS Code	IS 2386 (Part 4) 1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	09.06.2021

Sl No.	Details	Test No. 1	2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	383	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296	296	
4	Aggregate Impact value = percent fines $100^* (W_2/W_1)$%	22.31	22.72	**22.51**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specification table 400.12)

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 09.06.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.
Name of Work	Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	09.06.2021

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.50	12.10	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	14.20	13.80	
	Combined Flakiness & Elongation index	25.70	25.90	

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ಪಾಲಿಕೆ ಕೇಂದ್ರ ಕಛೇರಿಯ ಹಾಗೆ
ಎ.ಎ. ಕಛೇ, ಚಲವಾದಿಪಾಳ್ಯ, ಬೆಂಗಳೂರು.

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Job No.: CACE/BBMP/RGC/W.No.13/2021-22 Date : 11.06.2021

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **M/s. RG Constructions (Prop. Sri. Obalaramaiah Krishnamurthy),** Contractor, Bangalore.

Name of Work : Maintenance of roads footpath and Providing Kerbs in Ward No.13 Mallasandra Shettyhalli Sub Division, BBMP, Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 09.06.2021 to 11.06.2021

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	19.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum

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